WHAT IS CLAIMED IS:

1. A circuit for generating a compensation signal (TC) to compensate a tracking error (TE) swing in a servo control system, the TC signal being pre-defined in accordance with an algorithm for generating a TE signal, the circuit comprising:

a set of peak detection devices corresponding to a set of photo-detector elements formed in a photo-detector, each of the peak detection devices detecting an amplitude of an optical detection signal derived from a corresponding photo-detector element;

a set of amplifiers of a same gain corresponding to the set of peak detection devices, the gain being selectable between an inverting and a non-inverting terminals;

a set of gain selection signals corresponding to the set of amplifiers to select one of the inverting and non-inverting terminals in accordance with the pre-defined TC signal; and

an adder for adding the amplitudes that are gain selected.

2. The circuit of claim 1, the gain being determined by dividing a peak amplitude of a swing signal representing the TE swing with a peak amplitude of the pre-defined TC signal.

3. The circuit of claim 1, the amplifiers further comprising:

a set of unitary amplifiers of a gain selectable between 1 and -1, each of the unitary amplifiers being coupled between a corresponding peak detection device and the adder; and

an amplifier of the same gain as each of the set of amplifiers coupled to the adder.

4. The circuit of claim 1 further comprising:

a set of sample-and-hold devices corresponding to the photo-detector elements; and

a sampling pulse to activate the set of sample-and-hold devices at a sample time point.

5. The circuit of claim 1, the algorithm further comprising differential phase detection, push-pull and 3-beam.

6. The circuit of claim 1, the pre-defined TC signal further comprising a linear combination of peak (X) that represents an envelope peak amplitude value of an optical detection signal derived from a photo-detector element X of a photo-detector of the servo control system.

7. A servo control system comprising:

a photo-detector to detect a position of a laser spot;

a set of photo-detector elements formed in the photo-detector to provide optical detection signals regarding the position of the laser spot;

an amplifier circuit to generate a tracking error (TE) signal in accordance with an algorithm; and

a circuit for generating a compensation signal (TC) to compensate a swing of the TE signal, the circuit further comprising:

a set of peak detection devices corresponding to the set of photo-detector elements, each of the peak detection devices detecting a peak amplitude of an optical detection signal derived from a corresponding photo-detector element;

a set of amplifiers of a same gain corresponding to the set of peak detection devices, the gain being selectable between an inverting and a non-inverting terminals;

a set of gain selection signals corresponding to the set of amplifiers to select one of the inverting and non-inverting terminals; and

an adder for adding the amplitudes that are gain selected.

8. The system of claim 7, the TC signal being pre-defined in accordance with the algorithm.

9. The system of claim 8, the gain being determined by dividing a peak amplitude of a swing signal representing the TE swing with a peak amplitude of the pre-defined TC signal.

10. The system of claim 8, the pre-defined TC signal further comprising a linear combination of peak (X) representing an envelope peak amplitude value of an optical detection signal derived from a photo-detector element X of a photo-detector of the servo control system.

11. The system of claim 9, the swing signal representing the TE swing being associated with the algorithm.

12. The system of claim 7, the algorithm further comprising differential phase detection, push-pull and 3-beam.

13. The system of claim 7, the amplifiers further comprising:

a set of unitary amplifiers of a gain selectable between 1 and -1, each of the unitary amplifiers being coupled between a corresponding peak detection device and the adder; and

an amplifier of the same gain as each of the set of amplifiers coupled to the adder.

14. The system of claim 7, the circuit for generating the TC signal further comprising:

a set of sample-and-hold devices corresponding to the photo-detector elements; and

a sampling pulse to activate the set of sample-and-hold devices at a sample time point.

15. The system of claim 7 further comprising a controller including a low-band part and a high-band part.

16. The system of claim 15, the TC signal being combined with the TE signal in the amplifier circuit.

17. The system of claim 16, the TC signal and the TE signal combined in the controller being sent to the low-band part.

18. The system of claim 15, the TC signal being held in the controller for a predetermined time.

19. A servo control system comprising:

a photo-detector to detect a position of a laser spot;

a set of photo-detector elements formed in the photo-detector to provide optical detection signals regarding the position of the laser spot;

a tracking error (TE) signal generated in accordance with an algorithm;

a compensation signal (TC) associated with the algorithm to compensate a TE signal swing further comprising a linear combination of peak (X) representing an

envelope peak amplitude value of an optical detection signal derived from one of the photo-detector elements X of the photo-detector; and

a swing signal associated with the algorithm to represent the TE signal swing;

wherein a peak amplitude of the swing signal and a peak amplitude of the TC signal are measured in compensating the TE signal swing.

20. The system of claim 19, the peak amplitude of the swing signal being divided with the peak amplitude of the TC signal to determine a gain.

21. The system of claim 20, the TC signal being multiplied by the gain to compensate the TE signal swing.

22. The system of claim 19, the algorithm further comprising differential phase detection, push-pull and 3-beam.

23. A servo control system comprising:

a first circuit to generate a tracking error (TE) signal in accordance with an algorithm;

a TE swing produced in generating the TE signal in accordance with the algorithm;

a swing signal associated with the algorithm generated to represent the TE swing; and

a second circuit to generate a compensation signal (TC) to compensate the TE swing, the TC signal being K times in amplitude and reverse in polarity with respect to the TE swing, K being a coefficient;

wherein the coefficient K is determined by dividing a peak amplitude of the swing signal with a peak amplitude of the TC signal.

24. A method of compensating a tracking error (TE) swing in a servo control system, comprising:

determining an algorithm for generating a TE signal;

generating a swing signal associated with the algorithm that represents the TE swing;

generating a compensation signal (TC) associated with the algorithm;

measuring an amplitude of the swing signal as V_{TE};

measuring an amplitude of the TC signal as V_{TC}; and

determining a gain by dividing V_{TE} with V_{TC}.

25. The method of claim 24 further comprising:

determining whether V_{TE} is in phase with V_{TC};

determining the gain as - V_{TE}/V_{TC} if V_{TE} and V_{TC} are in phase, or as V_{TE}/V_{TC} if V_{TE} and V_{TC} are out of phase;

multiplying the TC signal with the determined gain; and

adding the multiplied TC signal to a circuit for generating the TE signal.

26. The method of claim 24, the algorithm further comprising differential phase detection, push-pull and 3-beam.

27. The method of claim 24, the generating of a swing signal further comprising biasing a focus error signal to generate the swing signal.

28. The method of claim 24, the generating of a swing signal further comprising tilting a disc during rotation to generate the swing signal.

29. The method of claim 24, the generating of a swing signal further comprising applying a force to a tracking coil to generate the swing signal

30. The method of claim 24, the generating of a TC signal further comprising generating the TC signal in a linear combination of peak (X) that represents an envelope peak amplitude value of an optical detection signal derived from a photo-detector element X of a photo-detector of the servo control system.

31. A method of compensating a tracking error (TE) swing in a servo control system, comprising:

providing an algorithm;

providing a first circuit to generate a tracking error (TE) signal in accordance with the algorithm;

generating a swing signal associated with the algorithm to represent a TE swing produced in generating the TE signal;

providing a second circuit to generate a compensation signal (TC) to compensate the TE swing, the TC signal being K times in amplitude with respect to the TE swing, K being a coefficient; and

determining the coefficient K by dividing a peak amplitude of the swing signal with a peak amplitude of the TC signal.

32. The method of claim 31, the algorithm further comprising differential phase detection, push-pull and 3-beam.

33. The method of claim 31, the TC signal further comprising a linear combination of peak (X) that represents an envelope peak amplitude value of an optical detection signal derived from a photo-detector element X of a photo-detector of the servo control system.

34. A method of compensating a tracking error (TE) swing in a servo control system, comprising:

providing a photo-detector to detect a position of a laser spot;

providing a set of photo-detector elements formed in the photo-detector to provide optical detection signals regarding the position of the laser spot;

generating a tracking error (TE) signal in accordance with an algorithm;

generating a compensation signal (TC) associated with the algorithm in a linear combination of peak (X) that represents an envelope peak amplitude value of an optical detection signal derived from one of the photo-detector elements X of the photo-detector; and

generating a swing signal associated with the algorithm to represent a TE swing produced in generating the TE signal.

35. The method of claim 34 further comprising:

measuring an amplitude of the swing signal as V_{TE};

measuring an amplitude of the TC signal as V_{TC}; and

determining a gain by dividing V_{TE} with V_{TC}.

36. The method of claim 35 further comprising:

determining whether V_{TE} is in phase with V_{TC};

determining the gain as - V_{TE}/V_{TC} if V_{TE} and V_{TC} are in phase, or as V_{TE}/V_{TC} if V_{TE} and V_{TC} are out of phase;

multiplying the TC signal with the determined gain; and

adding the multiplied TC signal to a circuit for generating the TE signal.